HERNIA CEREBRI.

[Extract from Report of E. J. Beall, M. D., Chairman of Section on Surgery. Meeting of Texas State Medical Association at Houston, April, 1885.]

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BY REFERRING to TEXAS COURIER–RECORD OF MEDICINE for Oct., 1884, you will find, from the pen of Dr. Stinson of Sherman, Texas, an interesting and well-described case of hernia cerebri, following injury of the skull, which demanded the use of the trephine. The article referred to will indicate that the case was transferred to my care at Fort Worth, as at that place an elder brother resided, and as I had been in former years the medical attendant in the family of the boy sufferer. I refer you to the well-written report of Dr. Stinson for the mode of supposed infliction of injury, the operation done, and the line of treatment pursued till the boy passed from his professional charge to that of the writer.

Townsend McVeigh, 9 years of age, had always enjoyed good health (except an occasional malarial attack), was of kind di-position, sprightly in mind and physically active. I first saw him at the Grand View hotel on the 22d day of August, 1884. An examination showed an irregular opening in the skull, very nearly the point at which the left superciliary ridge crosses the coronal suture, possibly a short distance above; and from that opening was protruded a mass of brain substance very nearly the size of a walnut. This mass overlapped the edges of the opening; and, by reason of the length of time since dressing, growing out of the environments incident to travel, was suppurating quite freely; and from the odor and appearance was not of an aseptic character or the laudable pus of the old surgery. This mass constituted the hernia cerebri, which, with the injury that caused it, gave origin to the condition and symptoms which I will undertake to briefly describe.

The child was emaciated to an extraordinary degree; his last night had been one of restlessness, with twitchings of face and limbs, sudden

cries, headache of an intense character, and loss of appetite; his pulse 115, temperature 103. There existed more or less paresis of the right arm and leg and right side of the face; intellect unclouded. The esthiometer indicated impaired power of recognizing points upon the dorsal portion of the arm and hand. On the anterior portion of the arm and hand, could not discriminate whether palm or arm was touched.

The term cerebral hernia, as used by the English surgeons, has been objected to; and, I think, with good reason, because the condition which they have so named does not resemble a rupture or protrusion of the brain with its membranes from its proper cavity; but is the result of a traumatism of the brain investments. The matter protruding may be brain substance, histologically normal; may be blood extravasated under the pia mater; or a granulation material from the brain, and intended as a conservative effort. These different conditions surely merit a greater nicety in nomenclature, although some American writers have adopted the term hernia cerebri, as do most English. Dr. Agnew, among the former, for reasons unnecessary to state, accepts and prefers the term fungus cerebri. He does this, I think, with as great a measure of inconsistency as those who adopt the term heading this case, as a thorough examination of the protrusion in different cases will indicate.

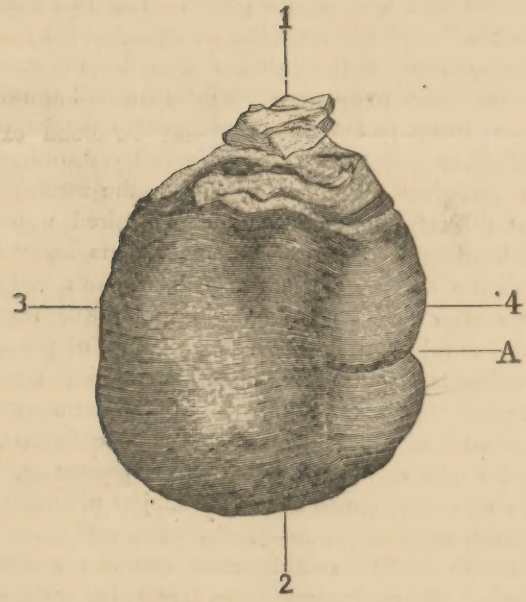
The case at issue, as regards the nature of the protrusion, showed brain matter; the microscopic examination indicated blood and exudation corpuscles with nerve tubes, etc. This would show that protrusion began immediately after the traumatism of the membranes. Later on changes in structure would naturally follow and vary in different portions of the tumor, as time existed for changes to occur incident to the influence of natural causes. There are those who think that inflammatory—that an exudation process is necessary ere the extrusion is produced. In cases in which it is admitted that the extruded mass is true unchanged brain tissue, what is the condition behind the mass? Are the vital forces renewing brain material within, or is a vacuum left? Does the remaining brain substance contract from intracranial pressure and extracranial withdrawal of force? A case is reported in which a large mass extruded was accidentally removed and recovery followed; ten years afterward a *post mortem* revealed a hollow vacant space in area equalling the part long lost. Rokitanski says that he has known enlargement of ventricles to be commensurate with the loss.

Another interesting point connected with the case under consideration, is its bearing upon cerebral localization. There was motor and

CIRCUMFERENCE MEASUREMENT.

1:2—$6\frac{1}{16}$ inches.

3:4—$5\frac{1}{8}$ "



HERNIA OR FUNGUS CEREBRI.

[NATURAL SIZE.]

Removed by DR. E. J. BEALL, from a child whose skull had been broken by the kick of a horse.

Reported in the TEXAS COURIER-RECORD OF MEDICINE AND SURGERY, Fort Worth, Texas, 1885.

A—Incision for microscopical examination. **1**—Pedicle.

sensory disturbance; no mental that could be recognized by myself or the father of the boy. The injury would indicate, considering the point of exit of the mass, that damage had been done to the anterior ascending frontal convolution and the ascending parietal convolution, these convolutions lying upon either side of the fissure of Rolandi. There existed a paretic condition of the right leg and arm, and awkward, irregular movement as the child advanced toward recovery; and all along, when he exercised his will power. This fact would indicate that injury had been inflicted upon the ascending frontal convolution, near the upper extremity of the fissure of Rolandi; and here is located by Ferrier the center of irregular or complex leg and arm movements. Irregular or combined movement disturbance of the hand and wrist, the prehensile movements, were manifestly disordered. This, according to Ferrier, would indicate injury to the ascending parietal gyrus. That the mental qualities were unimpaired would show, as physiologists have claimed, that the mental powers are "the result of the different combinations of memories of past events and the activity of groups of cells, which are probably located in the frontal lobes." The point of skull injury would not indicate lesions of the frontal lobes or their convolutions. Considering, then, the injuries in the case, and summing its gross physiology, we infer a beautiful harmony with several points connected with the subject of cerebral localization. In transcending the scope of this paper—that of presenting, by way of supplement, a case or so illustrative of the subject of antiseptic surgery, the interest attaching to the points of digression sufficiently apologizes.

It has already been stated that the mass extruded was in size like a walnut, that free suppuration was present, and that the pus was, in all likelihood, septic; for, indeed, the atmosphere of railway cars would likely induce that way. The tumor was subjected to pressure, for which there is very much authority, with which, however, I cannot agree. That the boy had been under judicious medication and dietetics, as far as I could learn, I think there can be no question.

The first duty undertaken by myself was to render the protrusion and surrounding surfaces as thoroughly and expeditiously aseptic as my idea and practice of antiseptic surgery could accomplish. With this object in view, I removed the "lead plate" and its compression bandage, thoroughly washed the parts with sublimate solution (1 to 1000), and dusted the apex with iodoform (dissolved in ether and evaporated) I placed over the mass quite a number of layers of sublimate gauze o. my own make—I prepare all my dressings—and over this rubber tissue

and retained the dressings with Von Brun's antiseptic bandage, smoothly but not tightly applied; for I could intensify motor and sensory disturbance by pressure. Quinine was continued through part of the day, which had been suggested by Dr. Stinson; easily digested and nutritious food was suggested, ammonium bromide and ergot in aqua camph. at night or in the day time if indicated by twitchings, cephalalgia and startings with cries; additionally cod-liver oil was administered after meals. At the expiration of twenty-four hours, I renewed dressings and reapplied as at the first examination of the case, and continued the same medication and food. I found rather less pus, and apparently improved in quality; temperature and pulse somewhat reduced, but not modified to the degree I had expected.

Third day, removed and renewed dressings as on previous day; condition indicative of little change other than the mass had increased in size to perhaps as large again as when first observed.

Fourth day, finding condition about the same, and as temperature and pulse remained elevated, I turned the tumor aside and carefully examined for infra-hernial abscess. I found an abscess and opened it, and within the abscess a piece of bone which had been driven in at or prior to the operation. The tumor had, in the meantime, still further increased in width and in altitude, yet I feared pressure and I feared excision; the books with the mortality after either proceedure did not furnish any encouragement. Strict antiseptic dressings reapplied.

Within two or three days the hernia had progressively increased in size; fever had abated, however; pulse somewhat improved in quality; appetite better; pus had materially diminished in quantity and was doubtless aseptic. Upon the whole the outlook was more encouraging generally, except the increasing development of the protrusion. I now discontinued quinine, as no idication existed for its antipyretic properties.

At this juncture, twelve or fifteen days having elapsed, assisted by Dr. Adams, I methodically each day, after thorough sublimate rinsing (1 to 2000), and with iodoform upon the apex, applied a circular bandage around the tumor, which in size exceeded that shown in the electrotype. This circular bandage was made of sublimated gauze two inches wide and two yards long; and, additionally, with the view of forcing a pedicle applied a sublimated bandage half an inch wide around the base of the mass close to the scalp; around and over all, sublimated jute or carbolated jute, with rubber tissue covering all, except the retention bandage made after Von Brun's formula. After a time the jute (carbolated or sublimated) served a good purpose—that of maintaining

the tumor erect, as the small bandage at the base did the important work it was intended to accomplish—that of pedicle formation. I endeavored to keep the constriction apace with the peripherical reparation; how well I succeeded is indicated in the illustration, the undulatory shading at the base of the tumor showing the gradual formation of the pedicle. With the gradual formation of the pedicle there was, *pari passu*, gradually increasing cicatrization peripherically as regards the scalp opening through which the mass protruded. I endeavored to have the two bandages so applied as that I would not induce strangulation and sloughing. In one or two instances, not having the broad, circular compression and the narrower constriction bandage properly adjusted, as to degree of tightness drawn, a small amount of apex necrosis was induced. This I quickly curetted away and stuffed the oozing capillaries and lymph channels with iodoform after sublimate irrigation, endeavoring, thereby, to head off all micro-organisms from entrance through these channels to parts within, and thus avoid their multiplication and peradventure the robbery from me of my little patient. I verily believe that just here we strike the key-note to the non-success so often attending these cases (*i. e.*, abscess formation) under the treatment of the older surgery. To strengthen the observation, I confidently refer you to Volkman and the wonderful results which have attended his operations about the head, since his adoption eight years ago of the practice of a strict, uncompromising system of antiseptic surgery.

When under a strict antisepsis, with which I long ago became enamored, and to which I am now satisfactorily wedded, coupled with the compression and constriction process to which, so far as I know, I have no predecessor in the management of hernia cerebri, I had seen the base of this great mass grow daily smaller and smaller, till it reminded one of an apple at the end of a riding whip. When under constructive medication and dietetics so faithfully followed, the roses were blooming again upon the bright little fellow's cheeks; when his tread and grip had become more elastic and strong; when in my own mind I looked no further than one day when I should transfix the small pedicle with a pin; and, after a ligature beneath the pin, would sever a tower from the citadel of thought, an unlucky hour came—a stone hurled from the hand of a playmate struck the tumor; and, though well supported with jute or bor-salicylated cotton, was partially severed. Free bleeding followed; great nervousness and pain of head; startings,

cries and febrile movements were renewed as in the early days of his coming. In this dilemma I deemed it best to detach the mass in the manner I had contemplated, and as has already been described.

Under treatment, about as described already, in a few days all unpleasant symptoms passed away, and the little fellow left for his Sherman home, well (save a slight paresis), as happy in the thought of soon joining his family as the birds he should see as he so swiftly sped on the iron horse, a living monument to antiseptic surgery, a bright jewel in the crown of the immortal Lister.

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